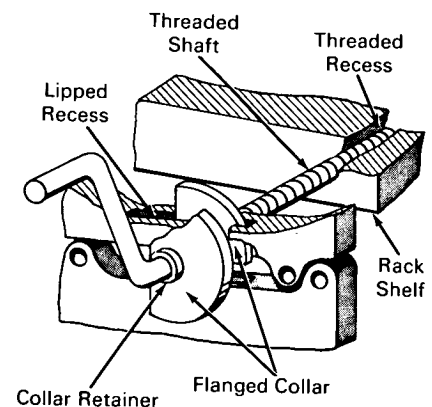
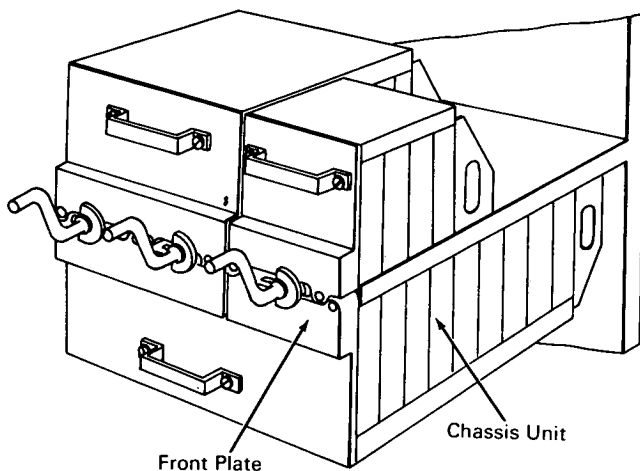


# NASA TECH BRIEF



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## Rack Mount Device Quickly Inserts or Extracts Chassis Units



**The problem:** To insert quickly and securely, or extract rack mounted electronic chassis units under conditions of severe vibration. Previous means have involved the use of screw fasteners and similar devices that require tools and appreciable time to attach and detach.

**The Solution:** A chassis unit inserting and extracting device that is driven in either direction by turning a simple hand crank.

**How it's done:** A standard equipment rack mount is modified so that the rack shelves that support chassis units both above and below them are equipped with threaded recesses. The chassis units are equipped with front plates having lipped recesses to receive the insert-extract device. The insert-extract device consists of a simple hand crank with threaded shaft on which is mounted a free-turning two-segment flanged collar held laterally in place by two retainers. The

outer portion of the flanged collar is of half-moon configuration and the inner portion is in the shape of a 90° circular segment.

In the sketch, the insert-extract device is shown in position for extracting an upper-mounted chassis unit. The flanged collar is positioned so that its inner portion enters the lipped recess of the chassis unit and the hand crank is turned in the counterclockwise direction. This exerts a steady outward force on the front plate and extracts the chassis unit from the rack mount. To install a chassis unit, a reverse procedure is used so that, by turning the crank in a clockwise direction, the outer portion of the flanged collar bears against the exterior of the front plate to steadily force the chassis unit into its installed position in the rack mount.

**Note:** This invention would be useful in aircraft or water craft, especially where violent or sudden maneuvering takes place.

(continued overleaf)

**Patent status:** Title to this invention, covered by U.S. Patent No. 3,123,418, has been waived under the provisions of the National Aeronautics and Space Act (42 U.S.C. 2457 (f)), to Collins Radio Co., Cedar Rapids, Iowa.

Source: Lester W. Haerther and Paul A. Zimmerman of Collins Radio Company subcontractor to North American Aviation, Inc., under contract to Manned Spacecraft Center (MSC-244)